Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A method of scheduling a CPU in which a clock speed of the CPU is controlled depending upon the states of processes, comprising:

substituting clock functions of an embedded system into a scheduler function;

comparing a wait time until a scheduling is completed with the sum of an execution time given for satisfying a real-time condition and an error range of a permissible error of a scheduling;

changing a scheduling clock state of a process depending on the compared result;

calculating an elapsed time with respect to a difference between the changed scheduling clock and a scheduling clock before the change of scheduling clock state to control the wait time; and

setting the clock speed of the CPU using a value of a newly determined clock speed from the calculated elapsed time.

2. (Original) The method according to claim 1, wherein if the wait time is larger than the sum of the execution time and the error range of the permissible error then the scheduling

clock state is set one step-higher than the current scheduling clock state before the change of scheduling clock state, and if the wait time is not larger than the sum of the execution time and the error range of the permissible error, then a scheduling clock state is set one step-lower than the current scheduling clock state before the change of scheduling clock state.

3. (Original) The method according to claim 1, wherein when the current scheduling clock state is Sleep or Wait, a one step higher a clock state is Sleep/Wait, and a one step lower clock state is Run.

4. (Original) The method according to claim 1, wherein the states of the processes comprise Run, Wait, or Sleep.

5. (Original) The method according to claim 1, wherein the clock functions of the embedded system comprise execution time given, prosecution time, wait time, permissible error, control of a process clock, a clock element, a real time clock, a clock of the CPU, and a new process function.

6. (Original) The method according to claim 5, wherein the new process function is used to initialize a corresponding regional variable when a process enters Run queue within the embedded system.

7. (Original) The method according to claim 6, wherein when a newly inserted process is set to a first predetermined value, a first regional variable in a system clock function is initialized to a second predetermined value, a second regional variable is given by a user, and a third regional variable set to 0.

8. (Currently Amended) An apparatus for scheduling a CPU, comprising:

a CPU adapted to control ~~the overall~~ operations of an embedded system, the CPU being equipped ~~with a PLL register~~ for controlling an operating clock of the embedded system and maintaining a clock for a real-time control within the CPU; and

~~an operating s/w that in controlled by~~ a controller configured to have applications for executing on the CPU ~~and including in the form of a process~~ and an operating system (OS); the operating system (OS) having a scheduler adapted to monitor states of ~~all the~~ processes executed on the CPU and to control the clock of the CPU depending on the monitored result of the states of the processes, wherein the controller is configured to determine a first amount of time required for a scheduler function to be completed, determine a second amount of time

required for an execution condition to be satisfied, and change a clock speed of a process in accordance with a comparison of the first and the second amounts of time, ~~and~~

~~a memory connected to the CPU and the controller~~.

9. (Original) A method of controlling a central processing unit (CPU) to control power consumption, comprising:

setting a clock speed of a scheduling clock to a predetermined value;

measuring a wait time for scheduling to be completed;

measuring an executing time for satisfying a real-time condition;

determining whether the wait time is more than the executing time; and

changing the clock speed of the scheduling clock, wherein if the wait time is more than the executing time, then the clock speed of the scheduling clock is increased, and wherein if the wait time is less than the executing time, then the clock speed of the scheduling clock is decreased.

10. (Original) The method of claim 9, further comprising:

measuring an elapsed time between the times at which the level of the scheduling clock speed changes to control the wait time.

11. (Currently Amended) A method of controlling power consumption in a central processing unit (CPU) by controlling a scheduling of the CPU, comprising:

substituting a system check function of a process into a scheduler function of a clock;

determining a first amount of time required for the scheduler function of the clock to be executed;

determining a second amount of time required for a real time condition to be satisfied;

determining whether the first amount of time is greater than the second amount of time; and

changing the clock speed of a process, wherein the clock speed is ~~decreased~~increased if the first amount of time is greater than the second amount of time and the clock speed is ~~increased~~decreased if the first amount of time is less than the second amount of time.

12. (New) The apparatus of claim 8, comprising:

a memory coupled to the CPU and the controller, and wherein the execution condition is a real time condition.

13. (New) The apparatus of claim 8, wherein the clock speed is increased when the first amount of time is greater than the second amount of time and the clock speed is decreased otherwise.

14. (New) The apparatus of claim 8, wherein when the first amount of time is larger than the second amount of time, a clock state is set one step higher than a current clock state before a change of clock state, and wherein when the first amount of time is not larger than the second amount of time then the clock state is set one step lower than the current clock state before the change of clock state.

15. (New) The apparatus of claim 14, wherein when the current clock state is Sleep or Wait, a one step higher clock state is set for Sleep/Wait.

16. (New) The apparatus of claim 14, wherein the current clock state one step lower clock is set for Run.

17. (New) The apparatus of claim 14, wherein the states of the processes comprise Run, Wait, or Sleep.

18. (New) The apparatus of claim 8, wherein the clock of the CPU is controlled based on the states of the processes using a plurality of different power supply voltages of the embedded system to supply differential power to each of the processes.

19. (New) The apparatus of claim 8, wherein the clock of the CPU is controlled based on the states of the processes using a clock function of the embedded system to supply differential power to each of the processes.